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* * * * * * * * * Welcome to STN International * * * * * * * * *

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NEWS 2 JUL 02 LMEDLINE coverage updated
NEWS 3 JUL 02 SCISEARCH enhanced with complete author names
NEWS 4 JUL 02 CHEMCATS accession numbers revised
NEWS 5 JUL 02 CA/CAplus enhanced with utility model patents from China
NEWS 6 JUL 16 CAplus enhanced with French and German abstracts
NEWS 7 JUL 18 CA/CAplus patent coverage enhanced
NEWS 8 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS 9 JUL 30 USGENE now available on STN
NEWS 10 AUG 06 CAS REGISTRY enhanced with new experimental property tags
NEWS 11 AUG 06 FSTA enhanced with new thesaurus edition
NEWS 12 AUG 13 CA/CAplus enhanced with additional kind codes for granted patents
NEWS 13 AUG 20 CA/CAplus enhanced with CAS indexing in pre-1907 records
NEWS 14 AUG 27 Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS 15 AUG 27 USPATOLD now available on STN
NEWS 16 AUG 28 CAS REGISTRY enhanced with additional experimental spectral property data
NEWS 17 SEP 07 STN AnaVist, Version 2.0, now available with Derwent World Patents Index
NEWS 18 SEP 13 FORIS renamed to SOFIS
NEWS 19 SEP 13 INPADOCDB enhanced with monthly SDI frequency
NEWS 20 SEP 17 CA/CAplus enhanced with printed CA page images from 1967-1998
NEWS 21 SEP 17 CAplus coverage extended to include traditional medicine patents
NEWS 22 SEP 24 EMBASE, EMBAL, and LEMBASE reloaded with enhancements
NEWS 23 OCT 02 CA/CAplus enhanced with pre-1907 records from Chemisches Zentralblatt
NEWS 24 OCT 19 BEILSTEIN updated with new compounds

NEWS EXPRESS 19 SEPTEMBER 2007: CURRENT WINDOWS VERSION IS V8.2,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.

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NEWS IPC8 For general information regarding STN implementation of IPC 8

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FILE 'HOME' ENTERED AT 15:18:25 ON 26 OCT 2007

=> file medline caplus embase biosis

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 0.21 | 0.21 |

FILE 'MEDLINE' ENTERED AT 15:18:50 ON 26 OCT 2007

FILE 'CPLUS' ENTERED AT 15:18:50 ON 26 OCT 2007

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FILE 'EMBASE' ENTERED AT 15:18:50 ON 26 OCT 2007

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FILE 'BIOSIS' ENTERED AT 15:18:50 ON 26 OCT 2007

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=> s primase and rna and (fluorescen? or fluorophore) and (template or target)
L1 19 PRIMASE AND RNA AND (FLUORESCEN? OR FLUOROPHORE) AND (TEMPLATE
OR TARGET)

=> dup remove 11

PROCESSING COMPLETED FOR L1

L2 16 DUP REMOVE L1 (3 DUPLICATES REMOVED)

=> s primase and rna and (fluorescen? or fluorophore)

L3 45 PRIMASE AND RNA AND (FLUORESCEN? OR FLUOROPHORE)

=> s l3 and screen?

L4 4 L3 AND SCREEN?

=> dup remove 14

PROCESSING COMPLETED FOR L4

L5 4 DUP REMOVE L4 (0 DUPLICATES REMOVED)

=> d ti 1-4

L5 ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
TI High throughput screening assays for bacterial primases

L5 ANSWER 2 OF 4 CPLUS COPYRIGHT 2007 ACS on STN
TI Fluorometric assay for bacterial primases

L5 ANSWER 3 OF 4 MEDLINE on STN

TI Homogenous assays for Escherichia coli DnaB-stimulated DnaG
primase and DnaB helicase and their use in screening for
chemical inhibitors.

L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN

TI FlashPlate scintillation proximity assays for characterization and
screening of DNA polymerase, primase, and helicase
activities

=> d bib 1-4

L5 ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

AN 2006:345752 BIOSIS
DN PREV200600344884
TI High throughput screening assays for bacterial primases

AU Griep, Mark A. [Reprint Author]; Koepsell, Scott A.; Hinrichs, Steven H.
CS Univ Nebraska, Lincoln, NE 68588 USA
SO FASEB Journal, (MAR 6 2006) Vol. 20, No. 4, Part 1, pp. A510-A511.
Meeting Info.: Experimental Biology 2006 Meeting. San Francisco, CA, USA.
April 01 -05, 2006. Amer Assoc Anatomists; Amer Physiol Soc; Amer Soc
Biochem & Mol Biol; Amer Soc Investigat Pathol; Amer Soc Nutr; Amer Soc
Pharmacol & Expt Therapeut.
CODEN: FAJOEC. ISSN: 0892-6638.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 12 Jul 2006
Last Updated on STN: 12 Jul 2006

L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:265750 CAPLUS
DN 142:477808
TI Fluorometric assay for bacterial primases
AU Koepsell, Scott A.; Hanson, Sarah; Hinrichs, Steven H.; Griep, Mark A.
CS Department of Microbiology and Pathology, University of Nebraska Medical
Center, Omaha, NE, 68198, USA
SO Analytical Biochemistry (2005), 339(2), 353-355
CODEN: ANBCA2; ISSN: 0003-2697
PB Elsevier
DT Journal
LA English

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 4 MEDLINE on STN
AN 2002270850 MEDLINE
DN PubMed ID: 12009693
TI Homogenous assays for Escherichia coli DnaB-stimulated DnaG
primase and DnaB helicase and their use in screening for
chemical inhibitors.
AU Zhang Yi; Yang Fude; Kao Yeh-Chih; Kurilla Michael G; Pompliano David L;
Dicker Ira B
CS Pharmaceutical Research Institute, Bristol-Myers Squibb Company,
Wilmington, DE 19880, USA.
SO Analytical biochemistry, (2002 May 15) Vol. 304, No. 2, pp. 174-9.
Journal code: 0370535. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200210
ED Entered STN: 16 May 2002
Last Updated on STN: 11 Oct 2002
Entered Medline: 10 Oct 2002

L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:154887 CAPLUS
DN 134:337441
TI FlashPlate scintillation proximity assays for characterization and
screening of DNA polymerase, primase, and helicase
activities
AU Earnshaw, David L.; Pope, Andrew J.
CS Molecular Interactions and New Assay Technologies, SmithKline Beecham
Pharmaceuticals, Essex, UK
SO Journal of Biomolecular Screening (2001), 6(1), 39-46

CODEN: JBISF3; ISSN: 1087-0571
PB Mary Ann Liebert, Inc.
DT Journal
LA English
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s 11 and screen?
L6 4 L1 AND SCREEN?

=> d ti 1-4

L6 ANSWER 1 OF 4 MEDLINE on STN
TI Homogenous assays for Escherichia coli DnaB-stimulated DnaG primase and DnaB helicase and their use in screening for chemical inhibitors.

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
TI Fluorometric assay for bacterial primases

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
TI FlashPlate scintillation proximity assays for characterization and screening of DNA polymerase, primase, and helicase activities

L6 ANSWER 4 OF 4 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
TI High throughput screening assays for bacterial primases

=> dup remove 11
PROCESSING COMPLETED FOR L1
L7 16 DUP REMOVE L1 (3 DUPLICATES REMOVED)

=> d ti 1-16

L7 ANSWER 1 OF 16 BIOSIS. COPYRIGHT (c) 2007 The Thomson Corporation on STN
TI High throughput screening assays for bacterial primases.

L7 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
TI Methods for real-time recombinase-polymerase amplification (RPA) of target DNA

L7 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
TI Methods and materials for RPA (recombinase polymerase amplification) of double stranded nucleic acids

L7 ANSWER 4 OF 16 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
TI Crosstalk between primase subunits can act to regulate primer synthesis in trans.

L7 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
TI Fluorometric assay for bacterial primases

L7 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides

L7 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
TI Oligonucleotide tagged nucleoside triphosphates (OTNTPs) for genetic analysis, and synthesis from reactive bifunctional amidites

L7 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 TI Genotype analysis using RecA protein and recombinase polymerase amplification (RPA) for potential use in molecular diagnosis of disease or detection of pathogenic organisms

L7 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension

L7 ANSWER 10 OF 16 MEDLINE on STN DUPLICATE 1
 TI Mechanism and stoichiometry of interaction of DnaG primase with DnaB helicase of Escherichia coli in RNA primer synthesis.

L7 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 TI Identification of differentially expressed genes in pancreatic cancer cells using cDNA microarray

L7 ANSWER 12 OF 16 MEDLINE on STN
 TI Homogenous assays for Escherichia coli DnaB-stimulated DnaG primase and DnaB helicase and their use in screening for chemical inhibitors.

L7 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 TI FlashPlate scintillation proximity assays for characterization and screening of DNA polymerase, primase, and helicase activities

L7 ANSWER 14 OF 16 MEDLINE on STN
 TI Amplifications of DNA primase 1 (PRIM1) in human osteosarcoma.

L7 ANSWER 15 OF 16 MEDLINE on STN
 TI Structural and functional studies of the rat mitochondrial single strand DNA binding protein P16.

L7 ANSWER 16 OF 16 MEDLINE on STN
 TI Identification and subcellular localization of the polypeptide for chick DNA primase with a specific monoclonal antibody.

=> d bib kwic 6,9,10 17

L7 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2004:220076 CAPLUS
 DN 140:248188
 TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides
 IN Hanna, Michelle M.
 PA USA
 SO U.S. Pat. Appl. Publ., 104 pp., Cont.-in-part of Appl. No. PCT/US02/34419.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|------|----------|-----------------|----------|
| PI | US 2004054162 | A1 | 20040318 | US 2003-425037 | 20030429 |
| | US 2003099950 | A1 | 20030529 | US 2001-984664 | 20011030 |
| | US 7045319 | B2 | 20060516 | | |
| | WO 2003038042 | A2 | 20030508 | WO 2002-US34419 | 20021029 |
| | WO 2003038042 | A3 | 20040325 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
 UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 AU 2004235368 A1 20041111 AU 2004-235368 20040429
 CA 2523442 A1 20041111 CA 2004-2523442 20040429
 WO 2004096997 A2 20041111 WO 2004-US13031 20040429
 WO 2004096997 A3 20050915
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG
 EP 1622923 A2 20060208 EP 2004-750780 20040429
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR
 JP 2006525022 T 20061109 JP 2006-513381 20040429
 US 2006204964 A1 20060914 US 2005-551775 20051003
 IN 2005KN02167 A 20060901 IN 2005-KN2167 20051102
 PRAI US 2001-984664 A2 20011030
 WO 2002-US34419 A2 20021029
 US 2003-425037 A 20030429
 WO 2004-US13031 W 20040429
 TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides
 AB . . . analogs may be incorporated into nucleic acids. In one embodiment, the process generates multiple amplification products from the primer and target. The methods generally comprise using a nucleoside, a mononucleotide, an oligonucleotide, or a polynucleotide, or analog thereof, to initiate synthesis of an oligonucleotide product that is substantially complementary to a target site on the defined polynucleotide sequence; optionally using nucleotides or nucleotide analogs as oligonucleotide chain elongators or chain terminators to . . .
 ST transcriptional amplification nucleic acid RNA polymerase nucleotide nucleoside analog; DNA methylation analysis transcriptional amplification
 IT Gene, animal
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (CDKN2A, anal. of methylation of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)
 IT Genetic element
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (CpG island, anal. of methylation of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)
 IT Bacteriophage SP6
 Coliphage T7
 Enterobacteria phage T3
 Escherichia coli
 (RNA polymerase of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)
 IT Feces

(anal. of DNA methylation in; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Methylation
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(anal. of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Nucleotides, analysis
Purine nucleotides
Pyrimidine nucleotides
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(analogs, reporter group containing, in transcriptional primer elongation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Fluorescent dyes
(as reporter groups; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT DNA
RNA
RL: ANT (Analyte); ANST (Analytical study)
(as template for amplification; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Diagnosis
(cancer, anal. of DNA methylation in; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Proteins
RL: ANT (Analyte); ANST (Analytical study)
(conjugates with oligonucleotides, detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Nucleic acid amplification (method)
(detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Mutation
(detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Pathogen
(diagnostic detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT DNA microarray technology
Northern blot hybridization
Nucleic acid hybridization
Southern blot hybridization
(for capture and anal. of amplification products; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(for protein capture; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Fluorescence resonance energy transfer
(in detection of transcriptional primer extension; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Disulfides
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(in protein conjugation with oligonucleotides; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Diagnosis
(mol.; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Transcription, genetic
(nucleic acid amplification using; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Deamination
(of 5-methylcytosine, in detection of DNA methylation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Cyanine dyes
(oligonucleotide conjugates, as reporters; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Quantum dot devices
(primer conjugates, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Phycoerythrins
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(primer conjugates, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Promoter (genetic element)
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primers containing, for transcriptional amplification; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Nucleoside analogs
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(reporter group containing, in transcriptional primer elongation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT mRNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(specific detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT Nucleic acid amplification (method)
(transcriptional; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 120-73-0D, Purine, analogs 289-95-2D, Pyrimidine, analogs 29220-54-0
185971-89-5 291536-62-4 400051-23-2D, AlexaFluor 647, conjugates with
ATP 670257-80-4 670257-82-6 670257-84-8 670257-86-0 671225-92-6
671234-25-6 671234-26-7 671234-27-8 671234-28-9
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as reporter, incorporation into primer extension products; detection

of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 951-78-0, Deoxyuridine
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (detection in DNA in anal. of DNA methylation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 554-01-8, 5-Methylcytosine
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (detection in DNA of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 9012-90-2, DNA-dependent DNA polymerase 9014-24-8, DNA-dependent RNA polymerase 9026-28-2, RNA-dependent RNA polymerase 64885-96-7, Primase
 RL: CAT (Catalyst use); USES (Uses) (detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 2382-65-2D, methylated
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 671527-51-8 671527-52-9 671527-54-1 671527-55-2 671527-56-3
 671527-57-4 671527-58-5 671527-59-6 671527-60-9 671527-61-0
 671527-63-2 671527-64-3 671527-65-4
 RL: PRP (Properties) (unclaimed nucleotide sequence; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

IT 671527-53-0 671527-62-1
 RL: PRP (Properties) (unclaimed sequence; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension using reporter group-labeled nucleotides)

L7 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 2003:356568 CAPLUS

DN 138:363805

TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension

IN Hanna, Michelle M.

PA Ribomed, Inc., USA; Ribomed Technologies, Inc.

SO PCT Int. Appl., 183 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | WO 2003038042 | A2 | 20030508 | WO 2002-US34419 | 20021029 |
| | WO 2003038042 | A3 | 20040325 | | |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, | | | | |

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
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 US 2003099950 A1 20030529 US 2001-984664 20011030
 US 7045319 B2 20060516
 CA 2465158 A1 20030508 CA 2002-2465158 20021029
 AU 2002360306 A1 20030512 AU 2002-360306 20021029
 EP 1451366 A2 20040901 EP 2002-795555 20021029
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
 JP 2006507792 T 20060309 JP 2003-540307 20021029
 US 2004054162 A1 20040318 US 2003-425037 20030429
 US 2004137461 A1 20040715 US 2003-600581 20030623
 US 2004234996 A1 20041125 US 2003-602045 20030624
 US 2005026150 A1 20050203 US 2003-607136 20030627
 US 7226738 B2 20070605
 US 2004175724 A1 20040909 US 2003-686713 20031017
 US 2004157257 A1 20040812 US 2004-790766 20040303
 US 2005064414 A1 20050324 US 2004-488971 20041018
 PRAI US 2001-984664 A 20011030
 WO 2002-US34419 W 20021029
 TI Detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension
 AB A method for detection of a target nucleic acid sequence by RNA polymerase-dependent elongation of a primer is described. The primer is elongated by the polymerase until the enzyme incorporates a blocked. . . results in extension product termination. The polymerase may then initiate extension of a new primer leading to amplification of the target sequence. The primer may include a promoter sequence suitable for the RNA polymerase or a fluorescent dyes as reporters. In one aspect, the invention provides a method for detecting a target protein, DNA or RNA by generating multiple detectable RNA oligoribonucleotides by abortive transcription. The method can be used for genotyping, mol. diagnosis, and detection of DNA methylation.
 ST transcriptional amplification nucleic acid RNA polymerase primer; DNA methylation analysis transcriptional amplification
 IT Gene, animal
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (CDKN2A, anal. of methylation of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
 IT Genetic element
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (CpG island, anal. of methylation of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
 IT Bacteriophage SP6
 Coliphage T7
 Enterobacteria phage T3
 Escherichia coli
 (RNA polymerase of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
 IT Methylation
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (anal. of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
 IT Nucleotides, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study) (analogs, as chain terminators for transcriptional primer elongation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
 IT Nucleoside analogs
 Nucleosides, analysis
 Nucleotides, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(as chain terminators for transcriptional primer elongation; detection
of nucleic acid sequences by isothermal RNA
polymerase-dependent primer extension)

IT Fluorescent dyes
(as reporter groups; detection of nucleic acid sequences by isothermal
RNA polymerase-dependent primer extension)

IT DNA
RNA
RL: ANT (Analyte); ANST (Analytical study)
(as template for amplification; detection of nucleic acid
sequences by isothermal RNA polymerase-dependent primer
extension)

IT Diagnosis
Diagnosis
(cancer, anal. of DNA methylation in; detection of nucleic acid
sequences by isothermal RNA polymerase-dependent primer
extension)

IT Proteins
RL: ANT (Analyte); ANST (Analytical study)
(conjugates with oligonucleotides, detection of; detection of nucleic
acid sequences by isothermal RNA polymerase-dependent primer
extension)

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(detection of nucleic acid sequences by isothermal RNA
polymerase-dependent primer extension)

IT Mutation
(detection of; detection of nucleic acid sequences by isothermal
RNA polymerase-dependent primer extension)

IT Pathogen
(diagnostic detection of; detection of nucleic acid sequences by
isothermal RNA polymerase-dependent primer extension)

IT Nucleic acid hybridization
(for capture and anal. of amplification products; detection of nucleic
acid sequences by isothermal RNA polymerase-dependent primer
extension)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(for protein capture; detection of nucleic acid sequences by isothermal
RNA polymerase-dependent primer extension)

IT Fluorescence resonance energy transfer
(in detection of transcriptional primer extension; detection of nucleic
acid sequences by isothermal RNA polymerase-dependent primer
extension)

IT Disulfides
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or
reagent); USES (Uses)
(in protein conjugation with oligonucleotides; detection of nucleic
acid sequences by isothermal RNA polymerase-dependent primer
extension)

IT Diagnosis
(mol.; detection of nucleic acid sequences by isothermal RNA
polymerase-dependent primer extension)

IT Transcription, genetic
(nucleic acid amplification using; detection of nucleic acid sequences
by isothermal RNA polymerase-dependent primer extension)

IT Deamination
(of 5-methylcytosine, in detection of DNA methylation; detection of
nucleic acid sequences by isothermal RNA polymerase-dependent
primer extension)

IT Cyanine dyes
(oligonucleotide conjugates, as reporters; detection of nucleic acid
sequences by isothermal RNA polymerase-dependent primer

extension)
IT Quantum dot devices
(primer conjugates, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT Phycoerythrins
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(primer conjugates, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT Promoter (genetic element)
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primers containing, for transcriptional amplification; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT mRNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(specific detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT Nucleic acid amplification (method)
(transcriptional; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 3051-11-4D, Brilliant Yellow, primer conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Brilliant Yellow, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 18472-87-2D, Cyanosine, primer conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Cyanosine, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 146368-16-3D, Cy3, primer conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Cy3, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 146368-14-1D, primer conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Cy5, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 989-38-8D, R 6G, primer conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(R 6G, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)
IT 67-43-6D, primer conjugates 81-88-9D, derivs., primer conjugates 81-88-9D, Rhodamine B, primer conjugates 83-88-5D, Riboflavin, primer conjugates 88-68-6D, Anthranilamide, primer conjugates 90-33-5D, 4-Methylumbellif erone, primer conjugates 91-64-5D, Coumarin, derivs., primer conjugates 129-00-0D, Pyrene, derivs., primer conjugates 143-74-8D, Phenol Red, primer conjugates 260-94-6D, Acridine, derivs., primer conjugates 569-61-9D, Pararosaniline, primer conjugates 574-93-6D, Phthalocyanine, primer conjugates 596-27-0D, o-Cresolphthalein, primer conjugates 605-65-2D, Dansyl chloride, primer conjugates 633-00-1D, Rosolic acid, primer conjugates 643-79-8D, o-Phthaldialdehyde, primer conjugates 2321-07-5D, Fluorescein, derivs., primer conjugates 3520-42-1D, Sulforhodamine B, primer conjugates 3546-21-2D, Ethidium, primer conjugates 3604-79-3D, m-Nitrotyrosine, primer conjugates 7440-27-9D, Terbium, chelates, primer conjugates 7612-98-8D, DABITC, primer conjugates 7613-08-3D, Acridine 2-isothiocyanate, primer conjugates 16423-68-0D, Erythrosin B, primer conjugates 16574-43-9D, Bromopyrogallol Red, primer conjugates 17372-87-1D, Eosin, derivs., primer conjugates 17681-50-4D, Reactive Red 4, primer conjugates 23627-89-6D, Naphthalocyanine, primer conjugates 25338-56-1D, Pyrenebutyric acid, primer conjugates 26093-31-2D, Coumarin 120, primer conjugates 27072-45-3D, FITC, primer conjugates

27816-59-7D, 4-Acetamido-4'-isothiocyanatostilbene-2,2'-disulfonic acid, primer conjugates 38183-12-9D, Fluorescamine, primer conjugates 47165-04-8D, DAPI, primer conjugates 50402-56-7D, EDANS, primer conjugates 51306-35-5D, DTAF, primer conjugates 53005-05-3D, 4,4'-Diisothiocyanatostilbene-2,2'-disulfonic acid, primer conjugates 53518-15-3D, 7-Amino-4-trifluoromethylcoumarin, primer conjugates 54849-69-3D, IR 144, primer conjugates 60311-02-6D, Sulforhodamine 101, primer conjugates 60520-47-0D, Eosin isothiocyanate, primer conjugates 61481-03-6D, primer conjugates 62669-70-9D, Rhodamine 123, primer conjugates 70281-37-7D, Tetramethyl rhodamine, primer conjugates 76823-03-5D, FAM, primer conjugates 82344-98-7D, XRITC, primer conjugates 82354-19-6D, Texas Red sulfonyl chloride, primer conjugates 82855-40-1D, JOE, primer conjugates 107347-53-5D, TRITC, primer conjugates 107743-39-5D, primer conjugates 120718-39-0D, ROX, primer conjugates 120718-52-7D, TAMRA, primer conjugates 138026-71-8D, BODIPY, primer conjugates 147492-82-8D, Malachite green isothiocyanate, primer conjugates 154088-80-9D, La Jolla Blue, primer conjugates 169799-14-8D, Cy7, primer conjugates 172777-84-3D, Cy5.5, primer conjugates 251102-88-2D,IRD 700, primer conjugates 256651-38-4D,IRD 800, primer conjugates 500723-56-8D, IR 1446, primer conjugates 522600-44-8D, primer conjugates 522600-45-9D, primer conjugates 522600-46-0D, primer conjugates 524019-23-6D, primer conjugates RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 951-78-0, Deoxyuridine
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (detection in DNA in anal. of DNA methylation; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 554-01-8, 5-Methylcytosine
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (detection in DNA of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 9012-90-2, DNA-dependent DNA polymerase 9014-24-8, DNA-dependent RNA polymerase 9026-28-2, RNA-dependent RNA polymerase 64885-96-7, Primase
 RL: CAT (Catalyst use); USES (Uses)
 (detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 2382-65-2D, methylated
 RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (detection of; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 80057-51-8D, Erythrosin isothiocyanate, primer conjugates
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (erythrosin isothiocyanate, as reporter; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 144-48-9, Iodoacetamide 541-59-3, Maleimide
 RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (in protein conjugation with oligonucleotides; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

IT 524091-13-2
 RL: PRP (Properties)
 (unclaimed sequence; detection of nucleic acid sequences by isothermal RNA polymerase-dependent primer extension)

AN 2003605723 MEDLINE
DN PubMed ID: 14557266
TI Mechanism and stoichiometry of interaction of DnaG primase with DnaB helicase of Escherichia coli in RNA primer synthesis.
AU Mitkova Atanaska V; Khopde Sujata M; Biswas Subhasis B
CS Department of Molecular Biology, School of Osteopathic Medicine, University of Medicine & Dentistry of New Jersey, Stratford, New Jersey 08084, USA.
SO The Journal of biological chemistry, (2003 Dec 26) Vol. 278, No. 52, pp. 52253-61. Electronic Publication: 2003-10-13.
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CY United States
DT Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LA English
FS Priority Journals
EM 200402
ED Entered STN: 23 Dec 2003
Last Updated on STN: 11 Feb 2004
Entered Medline: 10 Feb 2004
TI Mechanism and stoichiometry of interaction of DnaG primase with DnaB helicase of Escherichia coli in RNA primer synthesis.
AB Initiation and synthesis of RNA primers in the lagging strand of the replication fork in Escherichia coli requires the replicative DnaB helicase and the DNA primase, the DnaG gene product. In addition, the physical interaction between these two replication enzymes appears to play a role in the initiation of chromosomal DNA replication. *In vitro*, DnaB helicase stimulates primase to synthesize primers on single-stranded (ss) oligonucleotide templates. Earlier studies hypothesized that multiple primase molecules interact with each DnaB hexamer and single-stranded DNA. We have examined this hypothesis and determined the exact stoichiometry of primase to DnaB hexamer. We have also demonstrated that ssDNA binding activity of the DnaB helicase is necessary for directing the primase to the initiator trinucleotide and synthesis of 11-20-nucleotide long primers. Although, association of these two enzymes determines the extent and rate of synthesis of the RNA primers *in vitro*, direct evidence of the formation of primase-DnaB complex has remained elusive in *E. coli* due to the transient nature of their interaction. Therefore, we stabilized this complex. . . cross-linker and carried out a stoichiometric analysis of this complex by gel filtration. This allowed us to demonstrate that the primase-helicase complex of *E. coli* is comprised of three molecules of primase bound to one DnaB hexamer. Fluorescence anisotropy studies of the interaction of DnaB with primase, labeled with the fluorescent probe Ru(bipy)3, and Scatchard analysis further supported this conclusion. The addition of DnaC protein, leading to the formation of the DnaB-DnaC complex, to the simple priming system resulted in the synthesis of shorter primers. Therefore, interactions of the DnaB-primase complex with other replication factors might be critical for determining the physiological length of the RNA primers *in vivo* and the overall kinetics of primer synthesis.
CT Anisotropy
*Bacterial Proteins
Binding Sites
Chromatography, Gel
Chromatography, High Pressure Liquid
*DNA Helicases: CH, chemistry
*DNA Helicases: ME, metabolism
*DNA Primase: CH, chemistry
*DNA Primase: ME, metabolism
*DNA Primers: CH, chemistry
DNA, Single-Stranded
DnaB Helicases

Dose-Response Relationship, Drug
*Escherichia coli: EN, enzymology
Escherichia coli: ME, metabolism
Fluorescent Dyes
Glutaral: CH, chemistry
Kinetics
Mutation
Oligonucleotides: CH, chemistry
Protein Binding
*RNA: CH, chemistry

RN 111-30-8 (Glutaral); 63231-63-0 (RNA)
CN 0 (Bacterial Proteins); 0 (DNA Primers); 0 (DNA, Single-Stranded); 0 (Fluorescent Dyes); 0 (Oligonucleotides); EC 2.7.7.- (DNA Primase); EC 3.1.- (DnaB Helicases); EC 3.6.1.- (DNA Helicases)